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Engberg, Lars A.

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## Change Cases in IMEA

Lars A. Engberg ([lae@sbi.aau.dk](mailto:lae@sbi.aau.dk))  
Danish Building Research Institute  
Aalborg University, March 2013



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## **1. Conclusion progress report concerning the period 01/07/2012-31/12/2012**

The progress report is based on 1) an assessment of actual outputs compared to the output targets specified in “The detailed action plan IMEA: Component 4”, and 2) the Component 4 leaders’ assessment of the progress in individual CCs and the overall progression in relation to component 4. The conclusion has been discussed with all partners before submitted to the Interreg 4C Secretariat.

Output targets re “Format detailed action plan IMEA: Component 4” in the period 01/07/2012 to 31/12/2012:

1. Document with presentation of change cases
2. SWOT analysis for each CC
3. Transnational change case seminar in Assen, including report
4. Composition of critical friends teams
5. Stakeholder involvement strategies and examples
6. Toolbox outline

### **Conclusion a, outputs**

1. All change cases (except “Win-Win in Bensaúde”) have been described, and a process of questions and answers between the component leader and project owners has taken place
2. Most partners have conducted a SWOT-analysis for their CC combined with a preliminary stakeholder analysis. In a few cases the SWOT has not been made, because the specific focus/change agenda of the CC needs to be further specified and developed
3. The CC-seminar in Assen was a success
4. Critical friends’ teams were only formed between Assen and Copenhagen. This objective has not been met by the IMEA-partners, despite budgeted hours in the fall of 2012
5. The issue of stakeholder involvement strategies and examples was on the agenda in Assen, and the partners that focus on building retrofitting all struggle with the difficulty of involving private owners in their urban renewal activities
6. Component Leader 3, Gebalis, has taken the lead in collecting best practice examples that will go into the toolbox. The toolbox as such still needs to be outlined

### **Conclusion b, general progress**

The Change Case approach is ambitious. The basic idea is that professionals have to work smarter to promote more and better EE-solutions without bigger budgets, something that requires strategic changes and improvements in the institutional framework (public-private relations) regulating these EE-activities in relation to the built environment.

It goes without saying that change cases are demanding and difficult to develop. The key success-criterion assessing the CC-approach is “positive institutional ownership”, i.e. whether project owners needed to carry out the CC-activities anyway, or through the IMEA-project have discovered that the approach is instrumental in reaching their EE-objectives. Compared with the status of CCs at project start June 2012 noticeable progress has been made in almost all CCs.

Judged by the above criterion, all partners have formulated a CC-agenda, and expressed a sincere interest in and intention to develop a proactive change case focusing on new organisational mechanisms to better promote EE-objectives. The next step for the IMEA-partners will be to put these positive intentions into practice and allocate enough human resources to facilitate an institutional learning process, supported by the IMEA-network. The individual CCs are at different development stages, and some need to be put into practice.

A brief outline of the change case framework is provided in the following, followed by a presentation of each of the change cases in the IMEA-project.

### **Next steps spring 2013**

Please recapitulate the deliverables for component 4 as described in the action plan:

1. Partners document existing knowledge and specify the need for new knowledge in relation to the CC agenda
2. CCs are developed in dialogue with local stakeholders, emphasis on inclusion of local and regional stakeholders
3. Critical friends knowledge exchange
4. Progress is monitored and developed at CC-seminar in Hungary
5. Toolbox elaboration

*The outputs following the budget are:*

- 6 consultation visits (reports in next semester)
- 12 regional meetings incl. minutes (minimum)
- Change case seminar

Based on the evaluation it is clear that all partners except Assen and Copenhagen need to take action in developing bilateral dialogues (critical friends-mechanism) if this part of the IMEA program is to become a success. Please use this report to establish an overview of projects and themes. It is clear that all partners share interests in developing better area-based models for the promotion of green retrofitting in private housing while protecting the architectural and functional qualities of the housing stock. Further, the Hungarian and the Portuguese partners have a particular focus on the modernization of the energy system.

- I recommend that the partners from Hungary and Portugal together with Platform 31 investigate a possible critical friends' match in the coming months, a dialogue that would also contribute to the next meeting in Hungary
- The Danish and the Romanian partners currently exchange experiences about integrated urban renewal programs, and explore a possible CR exchange in 2013
- *I hereby urge all partners to consider AND implement their own value-creating strategy vis-à-vis the IMEA network that we have now established. 2013 is the critical year in IMEA. We need to capitalize on all of our preparatory work done up until now, and the existing window of opportunity will soon enough close down again*

## 2. The IMEA Change Case Framework

The IMEA partners have agreed to a joint “Change Case Framework” (IMEA, June 2012). The framework encourages partners to formulate local change strategies to effectively promote integrated energy efficiency measures in the difficult transition towards more sustainable buildings, energy systems and cities.

A “change case” is a heuristic that outlines 1) a baseline analysis of how to promote integrated EE measures with a clear problem-definition and a clear strategic objective, and 2) a proposed institutional change strategy that addresses the identified problem and proposes specific steps to reach the stated goal, and 3) benchmarks that allow for outcome evaluations, feedback measures and strategy improvements.

### ***IMEA Change Case framework***

#### **1. Baseline analysis: Objective, context and nature of challenge**

The baseline analysis describes the key issue to be dealt with: Problem-definition, institutional context, and a clear strategic objective that relates to the specific strategic change perspective in the national project. Relevant parameters in the baseline analysis may be: Urban and housing structure, energy system analysis, CO2 targets, key legislation, funding mechanisms, relevant public programmes and schemes and a SWOT of the key institutional player(s) with responsibility for policy implementation

#### **2. Change strategy, learning agenda and key drivers**

A **change strategy** is a strategy that describes *specific steps* towards an improvement in the institutional framework (public-private relations) for dealing with a specific problem

Carrying out a change strategy, public (and private) professionals working with policy implementation need to be involved in developing collaborative ties and new proactive practices. The **learning agenda** associated with this innovation relates to the specific new knowledge requirements necessary to carry out the change strategy

**Key drivers** are the specific mechanisms by which the change strategy is implemented

#### **3. Benchmarks and expected outcomes**

Benchmarks and outcomes need to be clear and measurable for the progress of the change process and its results to be measured and validated. Benchmarks are crucial to establish feedback mechanisms that allow for improving governance measures “as you go”

#### **4. SWOT analysis of CC**

When objective and change strategy is clear it is a logical step to conduct a SWOT analysis (of strengths, weaknesses, opportunities and threats) and discuss this analysis with stakeholders and IMEA-partners

Each IMEA-project has its own focus. The CC heuristic helps to clarify the specific themes of relevance to the change process in each partner case. It allows participants to strengthen their

own strategy development and implementation while learning from other participants' similar efforts.

**Overview: IMEA Change Cases March 2013**

<i>CCs in IMEA</i>	Focus	Problem analysis	Institutional change dimension	Change strategy	Drivers/actions	Stakeholders	Benchmarks
<b>Oradea</b>  <b>MRDT</b>	-Sustainable urban development -Mechanisms for cooperation on energy efficiency in historical buildings in Oradea region	- capacity building despite multiple (EU) programs? -Lack of EE renovations in historical buildings?		mix cultural preservation policy, spatial planning policy and energy efficiency policy	-Capacity building/ support local administrations to attract EU funding - Raise public awareness of EE -Facilitating know-how and technical support for EE professionals	-Owners of historical buildings -Cities, Regions -EE professionals -Homeowners associations -others	
<b>Mid-Pannon (p 5)</b> <b>Municipal. of Szekesfehervar</b> <b>SZEPHO Zrt</b>	-Better Integrated Urban Development Strategies (IUDS) -Support EU2020 Strategy and regional policy post 2013		Integrated approach (municipalities and urban-rural relations)		-Advise and consultancy for the buildings to be converted -Lobby governmental level to strengthen strategy and allocate funding for EE projects.		
<b>Assen</b>	To motivate home-owners to invest in EE	Inadequate energy efficiency investment process: Lack of information Lack of organisation Lack of cooperation	Horizontal cooperation Vertical cooperation Value chain integration	Develop a proactive approach towards homeowner, together with internal and external stakeholders, focused on groups instead of individuals.	-CRM-approach -Regional energy renovation team -One stop shopping -Collaborative involvement -New funding mechanisms	- Number of households with energy labels ABC - Number of households involved in EE process - Spendings on energy efficiency	
<b>Copenhagen</b>	Sustainable urban renewal	-Weak stakeholder involvement -reactive public role - weak connection to areabased approach		Rethink sustainable renewal practice	-New synergies between preservation and renewal -Smart-projects -New partnerships	-Homeowners -Contractors, -Urban regeneration agencies -others	
<b>GEBALIS</b>	community empowerment related to EE in a multicultural setting			participatory SWOT analysis	allocating of income from micro-generation to proximity services		
<b>CIMLT, DGOTDU</b>	-Energy matrix -Cross-municipal energy strategy, Lezíria do Tejo	-Deficient coordination and integration vertically and horizontally	-Relation between energy matrix and CIM-process?		-Energy Matrix -Geographical Information System (GIS) -Energy council	-Energy providers -Public agencies	

### **3. The Hungarian Change Case: The Energy Strategy of Székesfehérvár (2020)**

**Széphő, Mid-Pannon, VATI**

*Contact persons*

<b>Name</b>	<b>E-mail</b>	<b>Tel</b>	<b>Cell</b>
Akos Szauter	<a href="mailto:Szauter.Akos@szepho.hu">Szauter.Akos@szepho.hu</a>	+36 (22) 541 301	+36 (30) 962 3660
Edit Gáspár	<a href="mailto:gaspar.edit@szepho.hu">gaspar.edit@szepho.hu</a>	+36-22-541-395	+36-70-393-4730
Judit Varga	<a href="mailto:varga.judit@kprf.hu">varga.judit@kprf.hu</a>	+36-22-315-402	-
Tamás Kovács	<a href="mailto:kovacs.tamas.@kprf.hu">kovacs.tamas.@kprf.hu</a>	+36-22-315-402	+36-20-312-1030

#### **Baseline analysis: Context and nature of challenge**

The Energy Strategy of Székesfehérvár (2020) is developed using the methods and main steps of the change case framework. The key objective is to reduce the pollutant emission, fine-tune the plan documents dealing with energy efficiency, and define the exact steps of the implementation of the strategy where public participation plays a particularly important role.

In spite of the fact that the RED of the European Parliament and of the Council determined a 13 percent minimum rate of renewable energy (for Hungary) in gross final energy consumption by 2020, the target, which is presented in the domestic strategies as well, is higher: 14.65 percent by 2020. To achieve this objective the rate of the renewable energy has to be increased in the big cities as well. Today the proportion of it in Székesfehérvár is quite low (there isn't any exact statistical data): at schools, at the institutes of local government this proportion is nearly zero, they don't use renewable energy, although it would be good example for the students. If they saw it in their everyday-life, maybe it would be self-evident later, when they will be adults. It would be some kind of awareness, which is one of the most important things on the area of energy efficiency.

Széphő Zrt has come to the realization that there is a policy gap and a lack of stakeholder involvement, and has launched a bottom-up initiative: a strategy has to be completed which can be the basement of the future planning on the area of energy efficiency. To achieve the above mentioned objectives and to accomplish projects related to use of renewable energy, first we need this local EE strategy. The main aim of this strategy is that the institutes and companies of the local government use and supply more and more green energy which is produced by up-to-date equipment. This strategy establishes the developments on the area of energy efficiency on program level.

Most of the governmental companies, stakeholders worked together to prepare this planning document, and by this the local investments in the energy system are planned on that way that the projects can make the best of the local development facilities, avoid building parallel capacities and wasting resources. The strategy was approved by the local government in

December 2012, and it has to be a guideline for companies who plan developments on the area of energy efficiency, especially renewable energy. The aim is to generate more and better projects focused on the energy efficiency (hard and soft projects as well).

### **Change strategy, learning agenda and key drivers**

This energy strategy is a medium-term (7-8 years) development document that is commitment, target and tool as well. It shows that the city is committed to modern energy management. The new demands related to integrated energy efficiency measures and sustainable energy forms need to be handled and integrated as a complex system, and the main task of the strategy is establish a framework for this, and provide opportunities to accomplish coordinated projects. It's not efficient if many small, isolated projects are realized. With this document the integrated projects can be supported, and the renewable energy target at the domestic level will have much higher effect. The energy vision of Székesfehérvár in the strategy is that Székesfehérvár should be an innovative, energetically modernized city that nourishes a competitive economy and promotes a sustainable environment in a complex energy management system using renewable energy.

According to this vision the following steps are defined:

- Székesfehérvár changes its energy structure and energy supply system by discovering and using the renewable energy in a sustainable way
- The usage of the environment is renewed by emphasizing the economic and environmental energy management aspects in which the energy efficiency and energy savings are prioritized
- Better and more secure living conditions are created by increasing the environmental and energy security
- Strengthening its economy by changing its structure of financial sources; promotes new, environment-friendly industries and innovative technologies
- Székesfehérvár becomes a regional energy provider, having cooperation with its near and wider surroundings

The strategy identifies the necessary measures based on the energy potentials and demands in the city and in its agglomeration. In the document there were identified 24 measures which are connected to the following objectives:

- I. Renewal of the structure of the energy sources
- II. Development of the territory focused on the energy
- III. Improvement of the competitiveness of the economy – modernization of the energy management
- IV. Promoting an energy-intelligent approach

Specific measures have to be settled which contribute to achieve the domestic aims and the targets of the EU. Also, projects need to be developed; about 15-20 projects have to be collected in the coming 2 years. We selected 5 measures, which are the most important for us and we would like to generate projects related to the following:

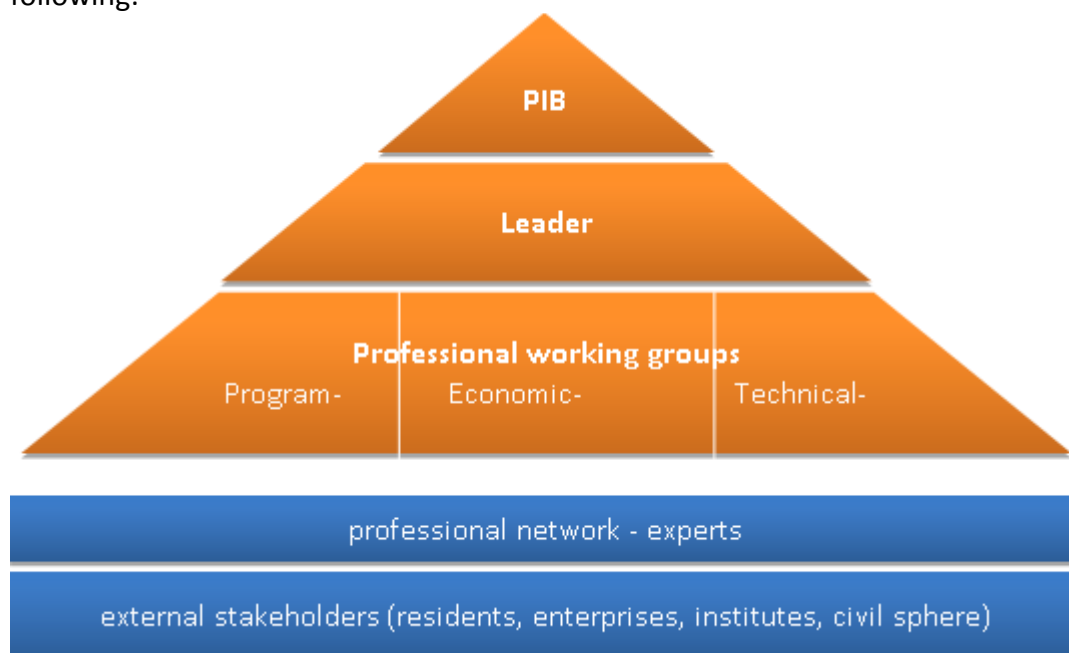


1. Conversion of existing heat generating units of district heating systems to renewable energy sources wholly or in part
2. Increasing the share of utilizing solar energy at the local energy supply
3. Energy modernization of buildings and heating systems
4. Awareness raising in education
5. Establishing a “green” information database and monitoring system in energy management

In the framework of the Change Case, the main aim is to raise energy awareness as set out in the strategy, and the assessment and definition of the potential projects that could contribute to achieving the objectives. All of this will be developed in a process-oriented approach:

- Széphő Zrt, as a partner responsible for supplying district heating in the City, has knowledge about the projects of this area;
- Mid-Pannon Zrt, as the partner responsible for developing and facilitating exact projects that can contribute to reach the energy efficiency targets;
- and VATI Non-profit Ltd, who provides policy recommendations from the country-level, and also try to enforce these recommendations in the national-level policy making.

The strategy was worked out with the cooperation of a mixed management group which has internal and also external members. The participation of the internal members is important because they have different public functions but it's also necessary to work with external members, as there are special groups whose knowledge is essential to create good strategy, projects which are accepted by different social groups. The structure of the working group is the following:



We will renew this working group as the cooperation is critical to achieve the objectives set forward in the strategy. Networks between private and public sector actors were very constructive

earlier, and we believe that the connection between the public and private sector will be strengthened. At present, Széphő Zrt, Mid-Pannon and Vati only have information about a few projects in connection with energy efficiency in the private sector, although we know that they plan good projects, but we don't know them in details. Public and private sector have to cooperate to advance their mutual interests but the "traditional" PPP relationship is not the best way. A specific business model to support the new energy strategy will have to be developed and adhered to in the future.

## Benchmarks and expected outcomes

It is very important to work out a coherent monitoring system. The traceability of the realization of the strategy is essential, and it helps to see if the project requirements are being met. The requirements of this monitoring system are not only that we will be able to check the energy savings but also the cost savings due to the EE projects. The statistical data concerning energy consumption and energy savings (city level data) can be verified. This is important to make sure that best and most efficient projects are accomplished. As we already mentioned, the territorial statistic data is missing but it's necessary to operate an objective statistic database and system, it could be the basement of the future territorial planning documents. On this workshops and meetings specific indicators have to be worked out: with them we can measure eg the decrease of CO2 emission or the increase of energy efficiency. The energy saving outlook has effect on the housekeeping, costs and with it maybe we can avoid the indebtedness in the medium term, which is a serious problem in Hungary. As the strategy has to be reviewed once in two years, we can see it's results or lack of results and be able to intervene in due time.

## SWOT analyses

Strengths	Weaknesses
<b>Renewable energy</b>	
Production facilities are better than the national average	We don't take advantages of the potential of the agricultural areas
The share of the renewable energy could be higher (theoretical potential) than the domestic target	Forestry is not significant
<b>Energy supply</b>	
Energy supply is higher than the average in Hungary	The share of energy crops is low
Big developments were accomplished on the area of district heating	Renewable energy is not used on the area of district heating
<b>Awareness, institutions</b>	
Open-minded population	Local energy organization is missing
	Missing of the monitoring system
<b>Opportunities</b>	<b>Threats</b>
Both Széphő Zrt and the local government is committed to increase the share of renewable energy especially on the area of district heating (which can be pilot project and followed examples)	Different interests of the different groups can cause conflicts
Cooperations can grow up which can ensure efficient energy supply	Missing capital (low support)
	Local, small projects will be accomplished instead of integrated projects

## 4. Change Case “Duurzaam wonen” (Sustainable living)

### Municipality of Assen, February 2013

<i>Name</i>	<i>E-mail</i>	<i>Tel</i>	<i>Cell</i>
Alfred Middelkamp	<a href="mailto:A.Middelkamp@assen.nl">mailto:A.Middelkamp@assen.nl</a>	+31 592 366 928	

#### 1. Key problem

The challenge for the city of Assen is to reach a 50% share of buildings in the existing building stock with an energy label of at least 'C'. To reach the target of 50% of the building stock (about 30.000 houses) at energy label C, an estimated total of 50 million euros is needed. It is obvious that the municipal (or any other) government will not be able to provide this kind of money. Moreover, strategies are needed to convince groups of private homeowners to take measures for energy efficiency improvement.

#### 2. Main objective

After 2014, 50% of the existing building stock in the municipality of Assen should have an energy label of at least 'C'.

#### 3. Outline of the strategy to be developed

In general, to scale up present activities on energy efficiency improvement as to reach the number of renovated houses, cooperation between all actors involved is needed. Cooperation between departments of local government to maximize the impact of measures. Value chain integration with parties involved in the renovation process to minimize fallout. And cooperation between governments on all levels to make the process as easy as possible for the homeowner. This strategy can be divided into four pillars:

##### 3A. Value chain integration

Integrating different actors in the value chain will secure a better proposal to the consumer, bringing costs and benefits together at the same decision point. Market innovation is needed: one-stop shopping offers provided by consortia of actors are created. Financial engineering is the biggest challenge: how do we align costs in the first year with benefits over the years after the improvement measures?

##### 3B. Horizontal cooperation

An area-based approach, combining measures from different task fields in the municipality on one location, has proven to be very effective in activating private homeowners to invest in renovation measures. Area-based approaches can provide the necessary scale level in addressing groups of homeowners instead of individuals, without losing the dire-needed tailor made solutions.

##### 3C. Strategic cooperation with housing corporations

Social housing associations are important actors, being the biggest homeowners. Contracts with housing corporations are used: corporations agree to take responsibility for their building stock, in exchange for benefits in other projects. Moreover, private homeowners can (voluntarily) join renovation programmes of corporations, thereby profiting from scale economy advantages.

### **3D. Cooperation between government levels**

Different actions from governments at different levels confuse the homeowner. A tailor-made process description with clear steps provides clarity to homeowners. All actions need to be aligned to maximize impact. As the value chain is mostly organised on regional level, actions from governments need to be organised on regional level as well.

#### **Key drivers**

- Awareness raising by making present energy use and saving possibilities visible.
- Innovative financial arrangements
- Central 'energy renovation desk' with proactive approach towards homeowners (CRM-approach) on regional level
- Clear and unambiguous promotion scheme aligned for all governments
- Cooperation with homeowner corporations and area-based approaches to address groups of homeowners

#### **Preliminary benchmarks**

Of 30.000 houses in Assen, 8.000 are privately owned and not sufficiently energy efficient at this moment (built before 1995). At this moment, 370 of these 8.000 houses are improved. Projected on the region, we expect that out of the 220.000 households, approximately 59.000 houses will need energy efficiency improvements, where probably around 2.500 houses already have been improved already. To reach our target, another 3.600 (Assen) or 27.000 (region) houses need to be improved.

#### **SWOT**

Strengths	Integrated and coordinated approach, combining different actions from all actors, to maximize impact and minimize confusion for the homeowner. Groups of homeowners can be addressed. Financial engineering provides funding for the process.
Weaknesses	Local government is still leading the process, so capacity and process budgets are still needed to keep the process going. Homeowner is not obliged to join the process.
Opportunities	All present and future stimulation actions on all government levels can be easily incorporated into the process. Area-based approach secures alignment with other government goals.
Threats	Strategy is built on voluntary involvement of many actors, so government is not in full control of pace and overall effectiveness.

#### **Issues for dialogue with IMEA partners**

##### **Key topics in the Assen CC:**

##### **Value chain integration**

- Experiences with creative financial arrangements (financial engineering)
- Examples of one-stop shopping solutions

##### **Horizontal cooperation**

- Experiences with area-based approaches
- How to select the right areas for these approaches
- How to involve private homeowners in this approach

**Strategic cooperation with housing corporations**

- Contents of a contract with a housing corporation
- Aspects to offer in return for their actions
- How can private homeowners join the corporation renovation programmes

**Cooperation between government levels**

- Experiences with regional task forces, superseding local governments
- How to align different stimulation actions with different specific demands
- Clear communication with the homeowner ("speaking with one mouth")

**Questions that we currently deal with:**

How to scale up our approach, so from the individual homeowner towards groups of homeowners, as to increase the speed of EE-improvements in Assen?

Area-based approaches: how to combine EE-improvements with other activities from municipality, housing corporations and other actors in the same area?

How can the energy advice (report with energy label and suggestions for improvement) be financed from expected benefits, instead of lump sum upfront payment?

How to promote proactive administration practices combining activities of governments on different levels and private parties?

Experiences with stimulating local entrepreneurs to form consortia offering a one stop shopping solutions for the homeowner (advice, financing, measures and labelling)

Some experience with funding mechanism of sustainability loan

Monitoring using GIS-data, municipal administration and information from other sources combined into one "dashboard" & CRM-system (in development)

Focusing all activities on the 'customer journey' → focusing on actions of the consumer

"Natural moments" that can be used to interest homeowners to invest in EE improvement

Street-based approach where homeowners stimulate each other to invest in EE improvement

Contract-based relationship with housing corporations for EE improvement (typical approach in the Netherlands)

Some first experiences with approaches for homeowners associations (3 pilots)

## 5. Romanian IMEA Change Case – Zone Istorice

Alina Blaga & Mihai Tomescu  
Ministry of Regional Development and Tourism  
February 2013

<b>Name</b>	<b>E-mail</b>	<b>Tel</b>	<b>Cell</b>
Mihai Tomescu	<a href="mailto:Mihai.Tomescu@mdrt.ro">Mihai.Tomescu@mdrt.ro</a>	+40 372 114 577	
Alina Blaga	<a href="mailto:alina.blaga@gmail.com">alina.blaga@gmail.com</a>		
Cristian Delcea	<a href="mailto:delcea.cristian@yahoo.com">delcea.cristian@yahoo.com</a>		
Ciprian Barna	<a href="mailto:zmo@oradea.ro">zmo@oradea.ro</a>	+40727714323	

### Short overview - historical centres

After the '90s, most of the historical centres of the Romanian cities underwent a process of continuous decline, caused by a combination of factors - economic, social, uncertainties regarding the legal framework - which has affected the competitiveness of urban settlements in the context of the fierce competition to attract investment and skilled population. From a physical point of view, the national built and cultural heritage is in a poor condition and the degradation is progressing at a faster rate than the protection or conservation measures, situation that is caused by a series of legislative problems and issues related to other fields: heritage, transport (accessibility), environment, economy (access to services), social protection, retrofitting of buildings, real estate developments.

The lack of a necessary legislative framework useful to intervene on buildings in the historical centre (buildings of historical or architectural value, part of protected areas) has made local public authorities not able to use European funds meant for integrated development in other issues apart from intervening on the public space. Moreover, there are few references to historical centres in the Romanian legislation, the term being assimilated in general to the larger term of protected built area. The cities' historical centre phrase appears in annex no. 3 of Law no.5/ 2000 regarding the approval of the National Spatial Plan – section III – protected areas (I. Values of national cultural heritage – historical monuments of exceptional national value), 1. Monuments and architectural ensembles, letter g – Urban ensembles. Listed here are administrative units with high concentration of built heritage of national cultural value.

The Law no. 350/2001 regarding spatial planning and urbanism completes the definition of protected areas from Law no. 5/2000. Thus, these areas present public interest and are defined as such not just for reaching the specific objectives of conservation for heritage values, but also for their rehabilitation.

**Two concepts have to be taken into account in the context of historical centres:**

1. **Protected built areas** which are stipulated in the National Spatial Plan
2. **Monument buildings** which have a dedicated law – Law no. 422/2001 regarding the protection of historical buildings; moreover, there is a List of Historical Monuments.

The lack of a clear definition of elements (intervention arrangements in areas with historical monuments, the demarcation of ensembles and sites, the lack of definition regarding “protected built areas” and “historical centres”) and a number of gaps in correlating the existent legislation with related provisions, such as the correlation of law no.5/2000 with the List of Historical Monuments, led to difficulties in applying the law. All these aspects have serious repercussions on how the state, through institutions, acts to punish illegal interventions in these areas. On the other hand, in the application process for the specific legislation, difficulties were faced in establishing the protected areas, starting from the existing inadequacies in regulations. Thus, the monuments can be divided into typological categories as they are mentioned in the Law no.5/2000, typology that doesn't follow closely the established categories from Law no. 422/2001 regarding the protection of historical monuments. In fact, protected built areas, defined as “historic city centres”, which also include new constructions, are included in the List of Historical Monuments in the “assembly” or “sites” categories, producing serious disturbances in the building approval process.



Fig. 1- View over Bucharest

**Now there is under development a proposal of public policy regarding the historical centres.**

**Programs for energy efficiency in Romania**



**In Romania, there is a National Program for Retrofitting, referring mainly to blocks of flats built between 1950 and 1990 (the Communist period). Therefore, the historical centres of cities are left aside.** One reason is that technical solutions are more flexible for such buildings comparing to the ones from protected areas or for monument buildings.

However, city centres are formed from households in a percentage higher than 80%, and they are responsible for a significant percentage of the energy consumption. "The main battle for urban sustainability will be to reach a maximum eco-efficiency in existing urban tissue" says the Toledo Declaration adopted in 2010 by the European ministers of urban development. In order to develop sustainable urban regeneration, key issues such as energy efficiency of existing buildings must be taken into account, depending on the physical condition of the building stock.

**Starting with 30<sup>th</sup> of October 2012 there are new regulations for the retrofitting of housing from public funds in Romania**

Romania has received the European Commission's approval to finance from European funds the projects for retrofitting of housing blocks. In parallel with the negotiations with the EC, it was necessary to fix the legislation. Thus, the Government approved the new regulations, allowing retrofitting to be made with European financial contribution, supplemented by a share from town halls, as well as a minimum owner's contribution. The new normative act provides for city halls the possibility to take over the financial burden of the owners associations, but with subsequent recovery of amounts within maximum 10 years. The Ordinance also stipulates that blocks to be undergoing retrofitting will be prioritized according to the level of energy performance (starting with the most energy inefficient housing blocks), number of flats (starting with the housing blocks having the highest number of flats) and year of construction (starting with the oldest housing blocks).



Fig. 2 Retrofitting – blocks of flats



## Key challenge: Historical centers

- After the '90s, most of the historical centres of the Romanian cities underwent a process of continuous decline, caused by a combination of factors - economic, social, uncertainties regarding the legal framework
- The lack of a necessary legislative framework useful to intervene on buildings in the historical centre has made local public authorities not able to use European funds meant for integrated development in other issues apart from intervening on the public space.
- Rehabilitation works for historical monuments and for other buildings situated in historical centers need to assure an increased quality of the execution, without affecting the architecture of the building.

In consequence, the popular technical solution for rehabilitation in Romania - the use of insulation material on the facade is excluded.



Fig. 3 – Oradea city center

## Change strategy, learning agenda and key drivers

- The Ministry of Regional Development and Tourism has under development a public policy proposal regarding the rehabilitation of historical centres.
- Complementary with the need of establishing a legal framework it is mandatory to define and develop through scientific research and knowledge exchange clear operational tools and procedures regarding new technical solutions for the retrofitting of historical buildings.
- These solutions should preserve the architectural identity of the historical sites in order not to alter their value.
- Introducing of energy efficiency measures in the main urban plans, regulations and programs related to the construction/rehabilitation of buildings;
- Promoting of PPP in view of implementing of local energy efficiency financing programs in the existing building stock from the City of Oradea;

- Transfer and Adapting of validated expertise/best practices from other cities (represented by the project partners) in terms of conceiving of targeted policies/measures in this field;

## **Expected outcomes**

- Formulating guiding principles in order to support the EE retrofitting interventions on historical buildings and in historical centers
- Providing technical solutions suitable for retrofitting in historical centers
- Creating the frame for an integrated rehabilitation of historical centers equals with attracting investors, creating jobs, improving the housing stock and the living conditions, supporting urban tourism, all in a context of energy efficiency
- Energy audit of buildings at the level of the Oradea City Center.
- Solution Study for providing the buildings with equipments that use the RES (Renewable Energy Systems).
- PPP models for financing various energy efficiency measures in the current built patrimony at the level of the City of Oradea.(including Cost Benefit Analysis).

## **Ministry of Regional Development and Public Administration and Oradea Metropolitan Area - needs of expertise**

- A review of good practices that could be applied to Romania in order to develop a retrofitting strategy for the historical centers (protected built areas and historical monuments)
- Approaches and instruments for the energetic auditing for the historical centers (protected built areas and historical monuments)
- Administrative mechanisms and financial instruments supporting interventions of retrofitting for the historical centers (protected built areas and historical monuments)

## 6. The Portuguese CC “ENERGY MATRIX”

CIMLT, DGOTDU

<b>Name</b>	<b>E-mail</b>	<b>Tel</b>	<b>Cell</b>
Fernando Reis Rosa	<a href="mailto:frosa@dgotdu.pt">frosa@dgotdu.pt</a>	+351217825070	

### Context and nature of challenge

Over the last decade energy efficiency has become a top priority of climate change mitigation related policy worldwide. Since 2007, the European 20-20-20 ‘*climate change and energy package*’ –that targeted a 20% reduction in primary energy use compared with projected levels– placed an added spotlight on energy consumption and generated an increasing concern about Portuguese energy efficiency shortcomings.

Energy efficiency has followed a path of spontaneous, voluntary and uncoordinated initiatives, with a strong, although compartmentalized, bottom-up approach. Top-down initiatives on energy efficiency mainly focus on performance standards and certification of industry, buildings and energy using equipment.

Energy consumption patterns are thoroughly linked to the way human activities are organized in type, space and time, a dynamic process inherent to the energy system’s character and design, albeit poorly reflected in the territory’s planning and management.

### Change strategy and learning agenda

The participation in the IMEA project involves the development and implementation of a cross-municipal energy efficiency platform, initially focused on renewable energy offer and decreasing energy demand. Our objective is to go beyond the European 20% reduction in primary energy consumption target in 2020.

One fundamental concern is related to the territorialization of energy efficiency initiatives through the regional and local spatial planning and urban development framework. We are thus aiming to include the efficiency related factors within the territory’s organization itself.

Although the Energy Efficiency territorial approach should extend to the whole country, a systematic downscaling will be necessary so as to recognize the adequate scope of intervention for each subject, ranging from regional to local administrations and institutions.

The multi-purpose municipal association is recent in the Portuguese territorial governance model, It proposes to bridge the gap between national and local administrations. As an intermediate governance level it balances adequate territorial scale – energy wise – with integration of municipal interests and executive authority, thus providing the ideal test-bed for cross-municipal energy strategy development.

This project will supply a starting point for the ultimate and systematic inclusion of energy efficiency concerns into spatial planning procedures and instruments. Awareness, coordination, integration and dissemination will also play a central role in the strategy's success.

### **The partners**

In order to pursue that goal an all public partnership was established involving CIMLT – that will provide the territory and executive authority - DGOTDU – which will offer the planning and urban development perspective and support - and LNEG – as an R&D partner.

#### CIMLT

The *Comunidade Inter Municipal da Lezíria do Tejo* (CIMLT), is a multi-purpose association of these Municipalities created for strategic territorial planning and management, regional development and vertical coordination and cooperation.

The Lezíria do Tejo agglomerate occupies 4 267 km<sup>2</sup>, with a population of 240 842, corresponding to the area of 10 Municipalities: Almeirim, Alpiarça, Azambuja, Benavente, Cartaxo, Chamusca, Coruche, Golegã, Rio Maior, Salvaterra de Magos and Santarém.

#### DGOTDU

DGOTDU has previously collaborated with the public administration energy efficiency program (ECO.AP), having been consulted on the *public energy efficiency barometer* and having contributed with the governance, spatial planning and urban development perspective for the energy efficiency in the public sector yearly reference publication.

#### LNEG

LNEG is a public research & development lab focused on supporting scientific and technological innovation in both the public and private sector in the areas of energy and geology.

### **Project activities**

As the Lezíria do Tejo lacks energy agencing, we adopted a method based on preliminary characterization, benchlearning and pilot initiatives. During this deployment phase, we intend to study and test so as to:

- a. Understand the base energy efficiency scenario and determine tendencies;
- b. Identify, describe and pinpoint critical situations;
- c. Set energy efficiency targets;
- d. Assess energy efficiency solutions.

In order to do that CIMLT will conduct for the whole territory of the Lezíria do Tejo:

- 1) Supply - mapping renewable energy production potential:
  - a) Wind potential – the map will have a 1x1km spatial resolution at 80m and 3 years reanalysis. Results will be integrated in GIS system;

- b) Solar potential – this map will be obtained through data mining and correction from the region's relevant earth and satellite stations (weather, universities, etc.) and national and international data servers. Data modelling will be applied to the whole territory through the diffuse solar fraction model. Results will be integrated in GIS system;
- 2) Demand:
  - a) The Lezíria's energy matrix - Characterization and map of energy consumption patterns and tendencies. Results will be integrated in GIS system;
  - b) Reducing the public lighting's energy consumption – This will involve identifying and describing existing public illumination posts, as well as the related distribution and transformation network. A total of 5500km of streets and roads will be analysed. The first phase will focus on the main urban center of each municipality, extending to remaining territory in latter phases. Data modelling will be applied to the whole territory. Results will be integrated in GIS system;

DGOTDU participation will entail:

- 1) Governance model for energy issues in the spatial planning framework;
- 2) Widely accessible (through DGOTDU's own National Planning Information System) GIS of the national energy system's main components;
- 3) Guidelines for technical and political action at regional and local level, through the embedding of energy efficiency principles and/or measures on planning tools and instruments;

Our approach relies on the analysis of the CIMLT experience and other spatial energy efficiency studies and experiences of national, regional and local level assessment and energy spatial planning, to provide inputs for an integrated view of the diversity of the energy efficiency issues and their relation to the territorial structure. Eventual choice of pilot-cases should therefore reflect the best national and international ongoing relevant practises in order to serve its *spill over* purpose.

Reference planning instruments:

- a) Regional Development Plan (PROT Alentejo);
- b) Portuguese power grid development and reinforcement plans (REN);
- c) National Strategy for Energy 2020 (MEID & MAOT);
- d) National Action Plan for Energy Efficiency.

LNEG's involvement is both related to technological support for CIMLT's activities, as well as energy consulting on DGOTDU's project components.

## 7. The Portuguese CC: “Win-Win in Bensaúde”

Gebalis

<b>Name</b>	<b>E-mail</b>	<b>Tel</b>	<b>Cell</b>
Sofia Figueiredo	sofia.figueiredo@etnoideia.pt	+351 21 4324358	
Sandra Sousa	<a href="mailto:sandra.sousa@gebalis.pt">sandra.sousa@gebalis.pt</a>	+351 2175 10303	+351 937525056
Jorge Miranda	tims@netcabo.pt	+351 214 159 202 / 214 147 300	

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## 8. The Danish CC: Sustainable urban renewal in Copenhagen

The Urban Design Department, Copenhagen City Council & The Danish Building Research Institute, Aalborg University Copenhagen, February 2013

<b>Name</b>	<b>E-mail</b>	<b>Tel</b>	<b>Cell</b>
Carsten Vesterager Petersen	<a href="mailto:A34A@tmf.kk.dk">A34A@tmf.kk.dk</a>	+45 3366 5213	
Jane Drejer Nielsen	<a href="mailto:jadrej@tmf.kk.dk">jadrej@tmf.kk.dk</a>	+45 33 66 12 03	
Jeanne Hvam Eghoff	<a href="mailto:AN6H@tmf.kk.dk">AN6H@tmf.kk.dk</a>	+45 33 66 12 14	
Lars A. Engberg	<a href="mailto:lae@sbi.aau.dk">lae@sbi.aau.dk</a>		+4526847777

The purpose of the Danish Interreg 4C project is to stimulate a proactive public governance practice in Copenhagen City Council that promotes cost-effective energy retrofitting with good architectural standards in private housing in the city region.

### 1. Climate mitigation and urban renewal in Copenhagen

The vision of the City of Copenhagen is to become the first carbon neutral capital in the world<sup>1</sup>. Between 2005 and 2015 the goal is to cut emissions by 20 per cent, and then to proceed to become the first carbon neutral "eco-metropolis" in 2025. One of the main goals of the City of Copenhagen is to achieve 10% of its total CO<sub>2</sub> reduction by 2015 through construction and renovation (retrofitting) projects. This is equivalent to 50.000 tonnes of CO<sub>2</sub>. Both construction and renovation projects will have to contribute to reducing energy consumption. Energy efficiency in terms of energy savings and use of renewable energy is required in construction and renovation of buildings which the municipality owns, rents or support financially like urban renewal projects.

Copenhagen stretches from the old buildings in the heart of the city to prize-winning modern architecture in the new developed areas. As most Danish cities, the City of Copenhagen has a longstanding tradition of urban renewal, and in the post-war period the city's building stock has undergone a substantial renewal process resulting in relatively high housing standards. Today, about 11 per cent or 33.000 homes of the city's 295.000 housing units are considered to be of inadequate standard, lacking basic amenities as district heating, toilet and/or bath. 4.500 units still have a toilet at the back stairs.

#### **Urban renewal**

Danish urban renewal is regulated in the Act on Urban Renewal and Urban Development. The act provides a financial subsidy to two types of urban renewal activity: *building* renewal and *area-based* renewal. The subsidy scheme is administered by the local authority, which makes a decision subject to an application from the property owner on whether the owner should be granted

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<sup>1</sup> Copenhagen City Council: *Copenhagen Climate Plan*, (<http://www.c40cities.org/docs/ccap-copenhagen-030709.pdf>, downloaded 1 December 2010).

building renewal funds and on the size of the funds. Local governments match fund state subsidies with an amount equal to that of the total state subsidy.

In the *building renewal scheme*, subsidies are granted to

- a) Rental properties without up-to-date heating, toilet or bath; or to rental properties built before 1950 which are considerably rundown
- b) Owner-occupied or cooperative properties without up-to-date heating, toilet or bath, or owner-occupied or cooperative properties built before 1950 which are considerably rundown
- c) Rebuilding of private business for rental property if the business has been closed down

The *area renewal scheme* is a public subsidy for a comprehensive area-intervention in a troubled urban area. Local authorities may apply for subsidies to renew rundown urban areas in large and small cities and in new housing areas with massive social problems. Subsidies can be used to renovate streets, roads and squares, and to start social and cultural activities. Also, local governments receive subsidies for planning, fact-finding and organising when transforming old business and port areas. Subsidies are conditional on the inclusion of local stakeholders in the planning and implementation of the initiative.



### ***Urban renewal in the Urban Design Department***

The Urban Design Department (UDD) administers the building renewal scheme, and the department has two key mechanisms by which it can promote energy saving measures in building renewal projects:

1. By supporting applications for renovation subsidies that include energy saving measures, and by issuing recommendations and specific demands in correspondence with the Building



Regulations 2010 and the city's norms in the municipal building code so that applicants further develop these measures in order to maximise overall energy savings.

2. By supporting innovative demonstration projects that promote comprehensive and integrated ('smart') energy renovations. Demonstration projects allow for a dialogue with building owners and contractors in the initial phases of project development

In 2009 the Danish Parliament adopted an amendment of the Law on urban renewal and urban development that allows city councils to disregard the eligibility criteria in the building renewal scheme and subsidise energy renovation projects if applicants have energy certificates. Buildings larger than 2.000 m<sup>2</sup> must have an energy certificate with information about the energy-related state of the house, and the certificate must recommend specific energy-improving investments.

At the same time (2009) the Copenhagen City Council adopted a new strategy on sustainable urban renewal which has a main focus on integrating energy efficient solutions in renovation projects. In order to achieve the objectives of the strategy and the Climate Plan the city claims energy certificates as a part of every application. This allows the city to formulate appropriate requirements for energy efficiency improvement measures in future urban renewal projects.



## **2. The Danish Change Case in the IMEA-project: Developing and combining 7 innovation tracks towards a new administrative model and a new strategy for sustainable urban renewal (2013-17) in the City of Copenhagen**

The building renewal scheme is based on the voluntary participation of house owners, and it is generally difficult to make these owners accept cost-effective energy measures when these measures imply extra initial costs in the project. It follows, that there is a general need to stimulate the demand for smart energy renovations in private housing in Copenhagen. The key barrier in this process is that the city administration cannot assist building owners in developing renovation projects and –applications to avoid positive discrimination of applicants, who should be treated equal before the law. The consequences are that

- a) projects do not benefit from current knowledge concerning technical and architectural solutions in the domain of comprehensive energy efficient retrofitting

- b) that planners cannot stimulate owners' preferences in relation to energy measures to any satisfactory degree
- c) that the general effort to promote energy measures takes place AFTER renovation projects have been formulated and presented to the City Council

UDD identifies a clear need to develop a new "food chain" in relation to building renewal in Copenhagen to create *innovations in the building renovation scheme that allows for a proactive municipal role in building renovations and a general push for a greater public demand for smart energy renovations*. To reach this 8 innovation tracks will be developed as the key drivers towards this goal. The core challenge in the Danish change case is to stimulate innovations in each track and to achieve 'cross-fertilization' or synergy between the innovation tracks to maximize implementation effects.

*Track 1: Proactive administration that improves EE in all urban renewal projects*

Administratively, the city can either accept or refuse to fund building renovation projects. This practice is reactive in the sense that the city is dependent upon the incoming flow of applications; it can only choose between these, it has no say with respect to the actual content of projects. In the new strategy, the intention is to develop a proactive role where planners initiate a dialogue with applicants earlier in the project phase. Also planners will more systematically emphasize capacity building in networks, integrated solutions, knowledge sharing and active street-level involvement.

*Track 2: Synergy between EE and architectural norms and standards*

Architecture and climate mitigation sometimes conflict if smart energy renovation measures are incompatible with safeguarding the architectural qualities of existing buildings. This potential conflict is an everyday challenge for planners in the Urban Design Department when they work to promote the climate agenda while safeguarding the City of Copenhagen's architectural heritage. Energy measures have to be smart in relation to both energy efficiency and architectural standards in a sustainable renovation practice. UDD recognises the need for developing new synergies between preservation and renewal, and wishes to strengthen the professional dialogue and integration between these different professional considerations and practices. The IMEA-project will hopefully contribute to this dialogue and the elaboration of best practice guidelines.

*Track 3: Innovative EE-partnerships and more value from demonstration projects (Green City Laboratory)*

The individual renovation project is complex and the challenge is to promote general guidelines and recommendations/demands that set new high standards *and* target the specific conditions of individual projects in steering dialogues with private contractors. This entails a high level of technical and architectural expertise that needs to be developed and tested in specific projects in collaboration between owners, contractors and city government. The city therefore emphasises the need to develop new EE-partnerships with building owners, contractors and citizens to promote innovative energy renovation projects and develop mechanisms that stimulate the demand for integrated and cost-effective energy measures. Also, demonstration projects need to be used more offensively to promote smart energy renovations in the city and in the region.

#### *Track 4: Improved horizontal collaboration and citizens' participation*

The City of Copenhagen has several departments involved in climate adaptation and the promotion of EE in the built environment. In UDD different planning units work with different approaches to citizens' participation in urban renewal. To promote integrated approaches to EE there is a general need for better administrative coordination of existing programmes that target sustainable urban renewal and development. Further, there is a need to develop proactive measures that stimulate public demand for smart energy renovations. In the IMEA-project, UDD will analyse existing administrative practices in the City of Copenhagen, and set up a taskforce to strengthen the horizontal integration and development of these administrative practices.

#### *Track 5: Innovative funding mechanisms*

The insufficient funding of smart energy renovations is a key barrier, and the existing funding arrangements will be reassessed with respect to possible funding opportunities that can supplement existing schemes, like ESCO-arrangements, revolving funds or specific cost-saving measures connected to climate mitigation and green retrofitting. The existing financial framework for building renovation will be scrutinized to assess whether the use of available resources for urban renewal can be optimized from an EE-perspective.

#### *Track 6: Testing and developing the EE-strategy in area-based approaches*

The complexity of the IMEA challenge needs to be addressed in comprehensive area-based approaches. UDD has identified a specific urban renewal area that will be used as a test-case for the development of the new proactive approach to sustainable urban renewal. The comprehensive approach will involve a climate partnership with the main energy provider in Copenhagen, involvement of local stakeholders, sustainable energy projects, information campaigns, mapping of CO<sub>2</sub> reduction potentials, rainwater collection measures, demonstration projects etc. The area-based approach is intended to promote local ownership to energy projects, and also influence citizens' energy consumption patterns.

#### *Track 7: Benchmarking EE-results in urban renewal*

Better tools for mapping and benchmarking actual CO<sub>2</sub> reductions and the costs associated with these need to be developed, and systems like LEED and BREEAM need to be considered in this respect.

#### *Track 8: New strategy for sustainable urban renewal (SUR) (2013-17) and new proactive and customer-oriented administrative model for SUR.*

The outcome of the seven innovation tracks will inform the new strategy for sustainable urban renovation to be adopted by the City Council in 2013. The strategy will reflect and support a new administration practice in urban renewal with a focus on customers' preferences, value creation, outcome evaluations and collaborative innovations.

#### ***Vision of change strategy: Sustainable urban renewal in Copenhagen***

The purpose of the Danish Interreg 4C project is to stimulate a proactive public governance practice in Copenhagen City Council that promotes cost-effective energy retrofitting with good architectural standards in private housing in the city region. Considering the main barriers in the existing administrative regime in Copenhagen, there is a need for a multi-level innovation process

that addresses and develops strategic and practical responses to these barriers. This multi-level innovation process we describe as a "change strategy", which will be the focus of the Danish project. The essence of the change strategy is to develop the seven innovation tracks and integrate these in a new strategy and a new proactive administrative model. The change process is already underway, and has been intensified in the second half of 2012 via a number of workshops, interviews and analyses. The result of this process will be formalised into a recommendation for a new strategy to be politically decided in 2013/2014 as well as a number of specific administrative innovations (processes, concepts, guides, networks etc.). A specific area-based urban renovation project ("Klimakarre") will act as laboratory for the development of some of these new measures including the green growth approach in City of Copenhagen.



### **3. Bench-marks and expected outcome will be developed end 2012**

In the spring of 2013 indicators and benchmarks in the 8 innovation tracks will be identified by city professionals and private commercial and non-commercial partners.

### **4. Preliminary SWOT- analysis**

The following is a preliminary SWOT-analysis that will be developed by professionals and stakeholders in the second half of 2012 as part of the 8-track innovation process.

#### **SWOT**

<b>Strengths</b>	<ul style="list-style-type: none"> <li>• Strong societal demand for EE-solutions in practice</li> <li>• Clear and operational innovation agenda</li> <li>• Political and administrative support to project agenda</li> <li>• IMEA supports local change processes</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>• Change case &amp; innovation tracks top-down formulations, not yet anchored in UDD</li> </ul>

	<ul style="list-style-type: none"> <li>• Budget-limitations will hamper end results</li> <li>• Costs may not outweigh tangible benefits in practice</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>• Revision of SUR necessitates institutional learning and innovation</li> <li>• Strong motivation in UDD regarding climate- and EE agenda</li> <li>• Integrated value creation boost to urban renewal</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>• That professionals reject EE-agenda</li> <li>• That proactive ambition will fail</li> <li>• That new strategy will not be implemented</li> <li>• That UDD will not deliver towards Copenhagen's climate goals</li> </ul>

### Issues for dialogue with IMEA partners

The Danish partners have a general interest in learning about best practices in sustainable urban renewal in partner cities and in establishing exchange relations at the level of individual professionals. Further, inputs and comments to the Danish change case are very welcome:

- How to develop proactive administration practices that improve EE in urban renewal projects?
- How to create synergy between EE and architectural norms and standards? Examples?
- Experiences with innovative EE-partnerships and value creation from demonstration projects (Green City Laboratory)?
- How to sustain and improve horizontal collaboration in pillarized systems and better support citizens' participation in sustainable urban renewal?
- Experiences with successful innovative funding mechanisms in relation to EE and building renewal?
- Experiences with developing the EE-strategy in area-based approaches?
- Good ways to benchmark EE-results in urban renewal?
- Suggestions for new and more ambitious city strategy for sustainable urban renewal in Copenhagen?